



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

M.F.

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/530,445

04/05/2005

Chang-Hée Lee

5489P074

4816

8791

7590

12/31/2007

BLAKELY SOKOLOFF TAYLOR & ZAFMAN
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

EXAMINER

PHAN, HANH

ART UNIT

PAPER NUMBER

2613

MAIL DATE

DELIVERY MODE

12/31/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/530,445

Applicant(s)

LEE ET AL.

Examiner

Hanh Phan

Art Unit

2613

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-33 is/are allowed.
- 6) ☒ Claim(s) 1-7, 16-19 and 21-29 is/are rejected.
- 7) ☒ Claim(s) 8-15 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 April 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 16-19 and 21-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyachi et al (US Patent No. 5,920,414 cited by applicant) in view of Doerr et al (US Patent No. 6,304,350) **OR** Kish, JR. et al (Pub. No.: US 2003/0095736).

Regarding claims 1 and 7, referring to Figures 19 and 21, Miyachi et al teaches an apparatus; comprising:

a wavelength tracking component (i.e., a photoelectric converter 125, detectors 115-115N and microcomputer 120, Figs. 19 and 21) to determine a difference between transmission band of wavelengths of a first multiplexer and a second demultiplexer in order to provide a control signal to match the transmission band of wavelengths of the first multiplexer and the second demultiplexer, wherein the first multiplexer is located in a first location and the second demultiplexer is located in a second location remote from the first location (i.e., Figs. 19 and 21, col. 19, 51-67 and col. 20, lines 1-54); and

a transmission wavelength controller (i.e., a photoelectric converter 125, detectors 115-115N and microcomputer 120, Figs. 19 and 21) to alter an operational parameter of the first multiplexer based on the control signal to control the transmission

band of wavelengths of the first multiplexer (i.e., Figs. 19 and 21, col. 19, 51-67 and col. 20, lines 1-54).

Miyachi differs from claims 1 and 7 in that he fails to specifically teach a multiplexer/demultiplexer. Doerr et al, from the same field of endeavor likewise teaches temperature compensated multi-channel, wavelength division multiplexed passive optical network (Figures 1, 6 and 9). Doerr et al further teaches a multiplexer/demultiplexer (i.e., multiplexer/demultiplexers 111 and 120, Figs. 1 and 6, from col. 3, line 16 to col. 8, line 50) **OR** Kish also teaches a multiplexer/demultiplexer (i.e., Figures 1-3, pages 5-11, paragraphs [0115]-[0143]). Based on this teaching, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the multiplexer/demultiplexer as taught by Doerr et al **OR** Kish in the system of Miyachi et al. One of ordinary skill in the art would have been motivated to do this since allowing providing a bi-directional optical communication system, saving space, weight and cost of the whole of system and temperature compensation of a wavelength division multiplexed communication system.

Regarding claim 2, the combination of Miyachi et al and Doerr et al **OR** Kish teaches the wavelength tracking component further comprises: a lock-in detector coupled to the first multiplexer/demultiplexer and an oscillator (i.e., Figs. 19 and 21 of Miyachi et al).

Regarding claim 3, the combination of Miyachi et al and Doerr et al **OR** Kish teaches the transmission wavelength controller comprises a temperature controller to

alter an operating temperature of the first multiplexer/demultiplexer based on the control signal (i.e., Fig. 1 of Doerr et al).

Regarding claim 4, the combination of Miyachi et al and Doerr et al **OR** Kish teaches the wavelength tracking component further comprises: a power summing device to measure a strength of an output signal from one or more optical receivers, wherein the power summing device electrically couples to the temperature controller; and the temperature controller alters the operating temperature of the first multiplexer/demultiplexer to achieve substantially a maximum power output from the power summing device (i.e., Figs. 19 and 21 of Miyachi et al and Fig. 1 of Doerr et al, from col. 3, line 16 to col. 8, line 50).

Regarding claim 5, the combination of Miyachi et al and Doerr et al **OR** Kish teaches the power summing device is an electrical power summing device (i.e., Figs. 19 and 21 of Miyachi et al and Fig. 1 of Doerr et al, from col. 3, line 16 to col. 8, line 50).

Regarding claim 6, the combination of Miyachi et al and Doerr et al **OR** Kish teaches the temperature controller dithers the operating temperature of the first multiplexer/demultiplexer in a first direction and then measures whether a strength of the control signal changes, and adjusts the operating temperature of the first multiplexer/demultiplexer based upon the detected change device (i.e., Figs. 19 and 21 of Miyachi et al and Fig. 1 of Doerr et al, from col. 3, line 16 to col. 8, line 50).

Regarding claim 16, the combination of Miyachi et al and Doerr et al **OR** Kish teaches the transmission wavelength controller comprises a temperature controller to alter an operating temperature of the first multiplexer/demultiplexer based on the control

signal (i.e., Figs. 19 and 21 of Miyachi et al and Fig. 1 of Doerr et al, from col. 3, line 16 to col. 8, line 50).

Regarding claim 17, the combination of Miyachi et al and Doerr et al **OR** Kish teaches the first multiplexer/demultiplexer has a greater transmission wavelength change ratio per degree change in temperature than the second optical multiplexer/demultiplexer (i.e., Figs. 19 and 21 of Miyachi et al and Fig. 1 of Doerr et al, from col. 3, line 16 to col. 8, line 50).

Regarding claims 18, 19 and 21-25, the combination of Miyachi et al and Doerr et al **OR** Kish teaches further comprising: a fiber fault detector to detect a defect in optical paths delivering optical signals to and from in the passive optical network (i.e., Figs. 19 and 21 of Miyachi et al and Fig. 1 of Doerr et al, from col. 3, line 16 to col. 8, line 50).

Regarding claims 26, 28 and 29, the combination of Miyachi et al and Doerr et al **OR** Kish teaches further comprising: a second optical multiplexer/demultiplexer to multiplex and demultiplex bi-directionally (i.e., Figs. 19 and 21 of Miyachi et al and Fig. 1 of Doerr et al, from col. 3, line 16 to col. 8, line 50).

Regarding claim 27, the combination of Miyachi et al and Doerr et al **OR** Kish teaches further comprising: a wavelength tracking component having a power combiner to measure total power of a transmitted signal from the subscribers after passing through the second optical multiplexer/demultiplexer; and a temperature controller to control an operating temperature of the second optical multiplexer/demultiplexer to maximize the output power of the power combiner (i.e., Figs. 19 and 21 of Miyachi et al and Fig. 1 of Doerr et al, from col. 3, line 16 to col. 8, line 50).

Allowable Subject Matter

3. Claims 8-15 and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 30-33 are allowed.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Kimotsuki et al (US Patent No. 6,868,200) discloses optical WDM transmission system.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan, can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


HANH PHAN
PRIMARY EXAMINER